

POSTER PRESENTATION

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Role of TRPV-1 in CGRP-mediated trigeminal sensitization

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Introduction

Calcitonin gene-related peptide (CGRP) plays an important role in migraine pathogenesis. Transient receptor potential vanilloid-1 (TRPV1) is a cation channel which is expressed in sensory ganglia and can be activated by a number of pain inducing stimuli. The relationship between CGRP and TRPV-1 is still unclear.

Objective

to investigate the functional role of CGRP on pain sensitization via the mediation of TRPV1 expression in rat trigeminal ganglion (TG).

Materials and methods

CGRP (600 ng/kg) was intravenously injected to the Wistar rats (250-300 g). Rat trigeminal ganglia and brainstem were removed 45 and 60 minutes after CGRP or saline injection. The levels of CGRP, TRPV-1, phosphorylated PKC (p-PKC) and cyclic AMP responsive element-binding protein (CREB) in TG were determined by western blotting and by immunochemical and immunofluorescence staining. The c-fos level in trigeminal nucleus caudalis (TNC) was also determined.

Results

Following CGRP injection, there was a significant increase in the amount of TRPV1, CGRP, p-PKC and CREB were observed in rat TG. In addition, an increase in c-fos levels was also determined in TNC of CGRP-treated rats indicating trigeminal nociception.

Conclusion

These results indicate the role of TRPV-1 in CGRP-evoked trigeminal sensitization. This may explain the

process of peripheral sensitization developed during the attack of migraine.

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